

WATERSHED MANAGEMENT AREA 5

HACKENSACK RIVER DRAINAGE

The watershed management area represents the Hackensack River drainage system. Waters within this area represent a major water supply to regions of high population density. The area lies mostly in Bergen and Hudson Counties and includes the following watersheds:

Hackensack River

Pascack Creek

Summary of ambient physical/chemical monitoring stations and classifications:

Station

Classification

Hackensack River at River Vale

FW-2 Nontrout

Note: The monitoring station on the Hackensack River at New Milford, directly downstream of the Oradell Reservoir dam (FW-2 Nontrout), has been discontinued as of 1991.

OVERALL MANAGEMENT AREA ASSESSMENT

- Swimmable Support Status:

WATERWAY

LOCATION

STATUS

Hackensack River

at River Vale

No Support

- Summary of Aquatic Life Support Status (Number of stations within each assessment category). Note: See the Biological Assessment Table located at the end of this section for details regarding macroinvertebrate assessments within the watershed management area.

No Impairment: 1

Mod. Impairment: 5

Severe Impairment: 2

MAPS here

HACKENSACK RIVER

WATERSHED DESCRIPTION

The Hackensack River drains an area of 202 square miles, which includes parts of Hudson and Bergen Counties. The Hackensack originates in New York State and flows south to Newark Bay. The river is 31 miles long in New Jersey. Major tributaries include the Pascack Creek, Berry's Creek, Overpeck Creek and Wolf Creek. The major impoundments on this river are Oradell Reservoir, Lake Tappan and Woodcliff Reservoir. This region of the state is very populated; major cities are Paramus, Bergenfield, Secaucus, Hackensack, Fort Lee, Jersey City and Englewood. Much of the Lower Hackensack watershed is tidal marshes known as the Hackensack Meadowlands.

About 50 percent of the land in this watershed is undeveloped, with more than 30 percent residential. The remainder is commercial/industrial. Of the approximately 80 NJPDES permitted discharges here, about 10 are municipal and the remaining are industrial/commercial. Waters in the Hackensack River and its tributaries have been classified as FW-2 Nontrout, FW-2 Trout Production (Creskill Brook), SE-1, SE-2 and SE-3.

WATER QUALITY ASSESSMENT

Physical/Chemical Water Quality

Location: Hackensack River at River Vale

Dissolved Oxygen: Acceptable.

Temperature: No violations of the upper criterion for non-trout waters.

Nutrients: Mildly elevated phosphorus levels; 20% of samples exceeded the water quality criterion. Nitrate+nitrite levels were acceptable.

Bacteria: Elevated, fecal coliform geometric mean is 219 MPN/100ml, with 35% of samples exceeding 400 MPN/100ml.

Sodium: Elevated with ten percent of values violating the criterion (secondary drinking water). The median value was 37.5 mg/l.

Heavy Metals: This location exhibits very high copper levels. Two of the three recordings exceed both the chronic and the acute copper criteria for the protection of aquatic life at this location.

Summary: Phosphorus and bacteria are mildly elevated. Of concern here are the very high copper values observed. The drinking water quality at this location is threatened by excessive sodium levels.

The Hackensack River from below the Oradell Reservoir to the confluence with Newark Bay is regarded by the Department as an impaired waterway due to toxic discharges emanating from point sources. The contaminants of concern are arsenic, mercury, lead, zinc and nickel. The criteria violated are USEPA's federal aquatic life chronic criteria and USEPA's federal human health criteria for exposure to carcinogens.

The Hackensack Meadowlands Development Commission has conducted annual summer monitoring of the tidal Hackensack River and tributaries since 1971. Results have shown very low dissolved oxygen (less than 1.0 mg/l) in the river during summer months, along with high levels of biochemical oxygen demand, oil and grease and fecal coliform bacteria. Water quality data have shown notable differences between monitoring sites along the river in the past, indicating that impacts do occur locally.

Biological Monitoring

Macroinvertebrate assessments have found impairment to be widespread with this management area. The Hackensack River is assessed only in its more upstream reach at Old Tappan where it was found to be moderately impaired. Most tributaries were assessed as moderately impaired including Musquapsink River, Pascack Brook, Dorotocheys Run and Van Saun Brook. Overpeck Creek and Tena Kill are both severely impaired. Only Dewars Kill was assessed to be non-impaired. See the Biological Assessment Table located at the end of this section for details regarding macroinvertebrate assessments within the watershed.

POINT SOURCE ASSESSMENT

A large number of industrial and municipal wastewater discharges are present in the lower Hackensack River watershed. The following facilities in the watershed are currently under enforcement action as of this writing.

FACILITY	LOCATION	RECEIVING STREAM	COMMENTS
Borough of Cliffside Park	Cliffside Park	Wolf Creek	ACO to eliminate untreated sewage discharges to Wolf Cr
Bergen Co. UA	Little Ferry	Hackensack R	ACO to eliminate wet weather sewage discharges.
Twp. of North Bergen	North Bergen	Cromakill Creek	ACO to eliminate sewage discharges.

Seven hazardous waste or Superfund sites which are known or suspected to be contaminating local surface waters are found in the Hackensack watershed. In addition, extensive mercury contamination of Berry's Creek has occurred. Certain fish from the Lower Hackensack River have been found to contain high PCB and chlordane concentrations. As a result, the sale and consumption of striped bass and blue crabs are prohibited. Thermal discharges in this area also impact water quality in the tidal Hackensack by reducing the water's ability to hold dissolved oxygen.

NONPOINT SOURCE ASSESSMENT

Water quality in the Hackensack River above the Oradell Reservoir appears to be primarily affected by nonpoint sources. Oradell Reservoir is highly eutrophic, and the Hackensack Water Company occasionally treats it in order to kill aquatic weed growth. Nonpoint sources within the overall watershed include extensive urban/suburban development and the land disposal of waste materials. The Upper Hackensack is reported to be impacted by runoff from construction activities, urban surfaces, storm and combined sewers, roads and by landfill leachate. These sources have resulted in flooding, habitat destruction, fish community degradation, reduced dissolved oxygen levels, excessive nutrients and accelerated eutrophication. In the Lower Hackensack River, the presence of these sources continues and their impacts become even more severe. Habitat destruction becomes more intense in the lower portions of the river due to riparian vegetation removal and flow regulation efforts. There are also severe impacts from chemical spills, landfills, hazardous waste disposal sites and in-place contaminants.

DESIGNATED USE ASSESSMENT

The Upper Hackensack River (above the Oradell Reservoir) will partially support the "aquatic life" designated use, but will not support the swimmable (primary contact) use. In the tidal Hackensack, both the "aquatic life" use and the primary contact use cannot be met. Based on the Hackensack Meadowlands Development Commission's sampling of the tidal Hackensack and tributaries, this region is not meeting the designated uses for SE-2 and SE-3 waters.

BIOLOGICAL ASSESSMENT TABLE: AREA 5

Mgt Area	Watershd	Site ID	Water Body	Location	Municipality	Sample Date	Biological Impairment Rating
5	14	AN0205	Hackensack R	Old Tappan Rd	Old Tappan	Jul 6, 1993	moderately impaired
5	13	AN0206	Musquapsink R	Harrington Ave	Westwood	Jul 6, 1993	moderately impaired
5	13	AN0207	Pascack Bk	Westwood Ave & Harrington Ave	Westwood/Rivervale	Jul 6, 1993	moderately impaired
5	14	AN0208	Dwars Kill	Ruckman Rd	Closter	Jul 6, 1993	non-impaired
5	14	AN0208	Dwars Kill	Ruckman Rd	Closter	Oct 19, 1993	non-impaired
5	14	AN0208	Dwars Kill	Ruckman Rd	Closter	Apr 5, 1994	moderately impaired
5	14	AN0208	Dwars Kill	Ruckman Rd	Closter	Jan 10, 1995	non-impaired
5	14	AN0209	Tenakill	Cedar Ln	Closter	Jul 6, 1993	severely impaired
5	14	AN0210	Dorotockeys Run	Tappan Rd	Harrington Pk	Jul 6, 1993	moderately impaired
5	14	AN0211	Van Saun Bk	Main St & Rt 4	N Hackensack	Jul 6, 1993	moderately impaired
5	14	AN0212	Overpeck Ck	Dean Dr	Englewood	Jul 6, 1993	severely impaired